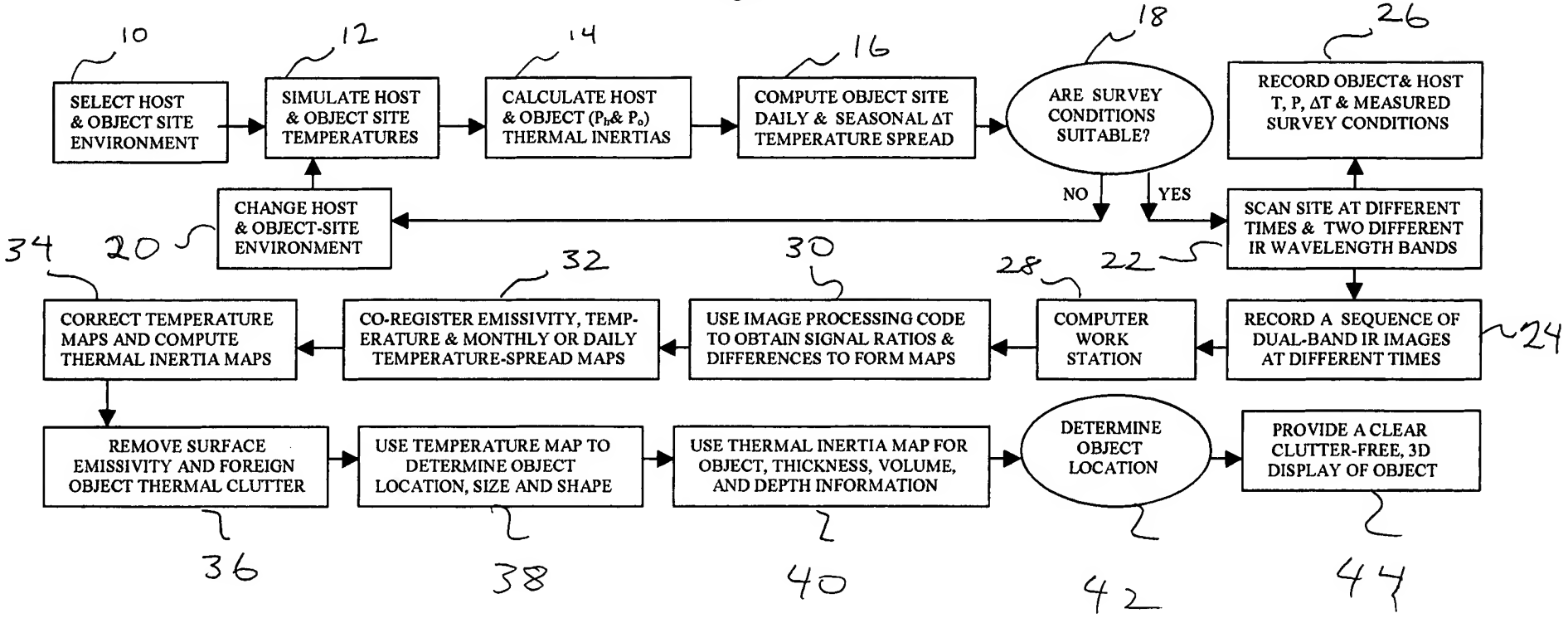
Figure 1


10
SELECT HOST & OBJECT SITE ENVIRONMENT
12
SIMULATE HOST & OBJECT SITE TEMPERATURES
14
CALCULATE HOST & OBJECT ($P_h$ & $P_o$) THERMAL INERTIAS
16
COMPUTE OBJECT SITE DAILY & SEASONAL ΔT TEMPERATURE SPREAD
18
ARE SURVEY CONDITIONS SUITABLE?
NO
YES
26
RECORD OBJECT& HOST T, P, ΔT & MEASURED SURVEY CONDITIONS
20
CHANGE HOST & OBJECT-SITE ENVIRONMENT
22
SCAN SITE AT DIFFERENT TIMES & TWO DIFFERENT IR WAVELENGTH BANDS
24
RECORD A SEQUENCE OF DUAL-BAND IR IMAGES AT DIFFERENT TIMES
28
COMPUTER WORK STATION
30
USE IMAGE PROCESSING CODE TO OBTAIN SIGNAL RATIOS & DIFFERENCES TO FORM MAPS
32
CO-REGISTER EMISSIVITY, TEMP-ERATURE & MONTHLY OR DAILY TEMPERATURE-SPREAD MAPS
34
CORRECT TEMPERATURE MAPS AND COMPUTE THERMAL INERTIA MAPS
36
REMOVE SURFACE EMISSIVITY AND FOREIGN OBJECT THERMAL CLUTTER
38
USE TEMPERATURE MAP TO DETERMINE OBJECT LOCATION, SIZE AND SHAPE
40
USE THERMAL INERTIA MAP FOR OBJECT, THICKNESS, VOLUME, AND DEPTH INFORMATION
42
DETERMINE OBJECT LOCATION
44
PROVIDE A CLEAR CLUTTER-FREE, 3D DISPLAY OF OBJECT